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A NIGHT ON THE BOSPHORUS.

AFTER a pleasant tour in Asia Minor, I found myself, one summer's day, in Constantinople, my cash and leave of absence almost run out. I had just enough of the former left wherewith to pay my passage to Malta, where my regiment was stationed, in an English steamer, the *Pera*, about to sail from the Golden Horn ; after that I had only left a sovereign and a few shillings. The steamer was lying in the stream ; she had taken in nearly all her cargo, and was expected to sail at midnight. That left me a whole day upon my hands, which I determined to employ by crossing the water to Scutari, to see an old friend, now serving as surgeon in one of the Turkish regiments, then quartered in one of those great white barracks which form such conspicuous objects from the strait—the buildings we used as hospitals during the Crimean War.

There are few pleasanter things in the world than to lie at ease reclining on the cushions of a caïque, with the amber mouthpiece of a chibouque, piled with fragrant Persian tobacco, at the lips, and darting over the blue pellucid waters, idly to watch the scene around. The beautiful city, with a thousand glittering spires and minarets, its deep cool shadows, and sparkling lights ; the multitudinous craft darting hither and thither, glowing with life and colour ; the pure invigorating air, the scenery as of fairy-land, or that blest abode where youth is perennial, and flowers always blooming ; the sky, the sea, the land, melting the one into the other in insensible gradations, so that one might as easily imagine one's self to be floating in the sky as on the sea, whilst the beauty and gladness of the world fill the senses with delight. Still, about the golden strait there hangs much of the charm and romance of eastern life. Now the gay caïque of the pacha shoots past like an arrow, the polished ebon arms of swarthy Ethiopians glittering in the sunlight, veiled and muffled figures shooting out little showers of glances and peals of shrill laughter ; now the bright daylight is dimmed with the flash of guns, and all around white vapour creeps out on the sparkling waters,

and dissolves away in curling filaments, and forth from among the light mist, the glittering barge of the great padishah steals forth, shrouded in impenetrable awnings : the great calif is abroad, perhaps to pray at some holy mosque, perhaps to visit the fair Fatima in the innermost seraglio.

Scutari with its cypresses and tombs, its hot white streets, and bare white barracks, is dull and uninteresting enough ; but the sight of my old friend, with whom I had passed many jolly days in times gone by, was sufficient recompense for deserting the pleasant confusion and bustle of Stamboul and the bazaars. In his company, the time flew fast. I meant to leave him at nine, to have ample time to settle myself on board the *Pera* before I sailed. But I lingered on till nearly ten ; there was yet plenty of time ; it would not take me half an hour to reach the *Pera*. My traps were on board ; I had nothing to do but to embark. When we left the barracks to go down to the water-side, we found that the weather had changed for the worse. The wind had risen, and was blowing from the south-west with fitful force. The sky was covered with flying scud, the harbinger of a dark advancing curtain of clouds.

'You'll find it pretty rough going across,' said my friend, scanning the sky with knowing eye ; and sure enough, when we reached the landing-place, we found that there was a pretty smart ripple on, well sheltered as it was. Still, there was nothing to hurt a boat of ordinary stability, and there were several such at the quay. Their owners, however, were Greeks, sad cowards on the water ; and when we succeeded in rousing them from their slumbers, one and all declared that nothing would induce them to cross the water on such a night. Promises of reward and threats of punishment were alike unavailing.

What was to be done ? Not only was my passage-money at stake, and I had no means to pay another, but if I lost this steamer, I shouldn't reach Malta till long after my leave had expired ; and a vision of seeing myself quietly gazetted out of the regiment as absent without leave, struck a cold chill to my bones. Any risk I would run to

avoid this, but then the boatmen couldn't be expected to share my feelings. They were impassible and unconvinable. I offered a sovereign—all my worldly wealth—to be put on board the *Pera*; but even the gleam of the gold was insufficient to tempt them to put away their sloth and timidity, or prudence, whichever you will.

In rage, I swore that I would have a boat, and pull myself across; and I jumped into one, and made as if I would cast her loose; but there were no oars on board, and the men only laughed at me.

'What on earth shall I do?' I asked my friend.

'Come back with me, and sleep at my quarters.'

'And lose my passage—ruin my prospects? No; anything but that!'

'Still, if you can get no one to take you across—and I don't blame them much, for there's a regular storm a-brewing'—

At this moment I was touched on the sleeve by some one, and turning round, I saw a venerable Turk, wearing a tattered green turban, clad in ragged garments.

'Captain,' he said in very decent English, 'want boat—a sov.—bono! I take you.'

He pointed to his craft, which was moored on the outside of the other boats, a small, rickety caïque that seemed as old and tattered as its master.

'Captain ship,' he said. 'Bono! You go? Yes; olrite.'

With tread that belied his age, he stepped over the intervening boats into his frail skiff, and began to grease his oars from a little horn he carried at his girth.

'It's madness to try to cross in a crazy little nutshell like that,' argued my friend; 'wait till the storm is over. You'll be drowned, to a dead certainty. You're determined to go? Well, I suppose you know best. There are a certain class of people who are exempt from fear of drowning. Good-bye, old fellow, if you will go.'

I had such good and weighty reasons to urge me on, that I didn't hesitate for a moment to take the offer of old Selim the Turk to ferry me over the dark and stormy water. He was placid and composed, and seemingly all unconscious of danger; and although I felt in a horrible stew myself, I took care not to shew it as I stepped gingerly over the rocking boats and stowed myself carefully at the bottom of the old caïque. The boatmen on shore saluted us with a volley of imprecations and evil prognostications as we left the landing-place. I dared not turn my head, for fear of upsetting the boat, but I waved with my hand a defiance to evil omens that my heart was very far from feeling.

A strong current from the Black Sea, as everybody knows, runs down the Bosphorus, so that, in crossing from Scutari to Pera, the boatmen take a considerable stretch to the north in the slack of the current along the shore, to make without difficulty the opposite side. As long as the boat was taking this upward course, we were in some measure protected from the sea, which was now rising rapidly, by a projecting spit of land; but when old Selim shaped his course to shoot across the strait, we met the full force of the wind, which had strengthened to a regular gale. The opposition of wind and current had raised a short furious sea, which was most dangerous for our frail craft; fierce white billows foamed against us, and the wretched old boat creaked and groaned and threatened every moment to part asunder.

Selim toiled away at his bulbous-handled oars, sighing and groaning softly to himself, and looking over his shoulder at the advancing waves with a kind of hopeless resignation. To him, old and poor, with Paradise in full view—for was he not a pilgrim and a descendant of the Prophet!—poor in this world's goods, but with an inestimable heritage in heaven—to Selim, it seemed, I daresay, no very serious misfortune to be quenched in this troubled sea; but to me, who was young, and hopeful of the future, with no particular views as regards Paradise, it was a very different matter; but I could move neither hand nor foot to help; I could only lie stiff and rigid at the bottom of the boat, to avoid disturbing its frail balance, and watch the sea as it curved above us, sometimes carrying us aloft on its crest, sometimes breaking over us in sheets of foam and spray.

Hitherto, the night had been comparatively light and the air clear. The moon was somewhere overhead, and visible now and then in rifts of the storm-clouds; here and there, the lights of ships shone like stars in the lower heaven; but now a mist drove up with the wind, that wrapt us in impenetrable gloom. I could just see the face of Selim as he bent forward to his stroke, his patient, death-like face, the great bulbs of the oars as they took their forward sweep; everything else was invisible, except the white sheets of foam that curled above us.

There was one thing: this could only last a few minutes; if the man pulled stoutly, and some heavier wave than usual didn't swamp us, we should be in smoother water ere long. We were now in the very centre of the current and of the channel, and exposed to the full force of wind and seas; but if the old Turk lasted out, we should win through this, and gain the shelter of the land. I was entirely without power to help in any way. Nothing but perfect stillness and repose could I contribute to the safety of our lives. And now, with dismay, I saw that the strength of the Turk was declining at each moment, each stroke that he made was feebler than the last; finally, he ceased to pull at all, but continued to keep the head of the boat to the sea. Then his head sunk upon his breast, his limbs relaxed, he lost his hold of the oars altogether, and arranged his limbs in an attitude of prayer; we broached to before a heavy sea; it came ramping and roaring over us; the boat vanished from beneath me, and I went spinning down into the depths, clutching desperately at nothing. For a moment, I forgot that I could swim, the impulse was so strong upon me to clutch and grasp. The shock and chill, too, overpowered me, for the water was desperately cold, and overwhelming fear and despair stopped the beating of my heart. But as the downward impulse ceased, and I began to rise to the surface, instinctively I struck out, and aided my ascent. I rose just in the trough of a wave, and caught a momentary glance of a patch of sky, and a star that seemed to look at me with an eye of ineffable melancholy, of a dark wall of water curling above me; then I was caught swiftly up, and buried once more in a cataract of foam. I was a very tolerable swimmer on lakes and rivers, but I had never practised in heavy seas, and I found that my skill would be of little use to me. The broken crests of the waves were too terrible—they lashed me with such bewildering force, and scorn and spite, that I felt it hopeless to

contend against such overwhelming power: even a strong accustomed swimmer in such a sea as this, without the hope of immediate help at hand, could hardly hold out long.

It seems a trivial thing to read of, perhaps, the death-struggle of a man, one of the myriad throes that each hour witnesses; but to him who undergoes it, the thing is a keen and bitter tragedy. It seemed incredible, impossible, that I should be at the last moment of my life—but already stupor was seizing on my limbs, a bitter cold was striking to my heart. I had gone under for the last time, as I thought, and the rapid current was sweeping me along towards the open sea, when I felt the gloom of some dark object above me, and struck heavily against an iron chain. It was the chain of a ship lying at anchor in the stream.

For a moment, as I rose to the surface, and saw the chain stretching out of the water to the ship, I thought that I was saved; the current had swept me out of the broken water, and the storm seemed to have ceased as suddenly as it had risen; but the chain, after all, was a danger rather than a help. It swayed to and fro in my grasp; now I had my head above water, now I was covered with a rush of water; the strong current, too, was dragging at me, and trying to suck me down under the keel of the ship; I was wasting my last strength in a useless struggle, drowning myself as fast as I could. I let go the chain in despair, and felt myself scraping the smooth sides of the ship, clawing at the copper sheathing in desperate agony. But I rose once more in a little oily eddy on the leeward quarter of the vessel, and then I saw that to the stern of the ship was moored a small boat, that was tossing up and down on the sea, now drawn away by the force of the current, again carried almost against the stern-post of the vessel by impact of wind and wave. The swirl of the eddy brought me within a foot or two of the stern. I made one or two desperate strokes, and raising my hand with a last effort, grasped the gunwale of the boat.

With the hope of safety, my heart revived. The boat I might manage to crawl into without assistance. It was no easy matter to do. I felt my way along the side to the stern, and then contrived to get my arms over the gunwale; by resting a little, and trying again when an approaching wave gave me an impulse, I managed, although at the imminent risk of swamping the boat, to crawl into it. It was half-full of water, and threatened at each instant to fill and sink beneath me, and yet it seemed at that moment a most precious ark of refuge.

I rested for a while, stretched out upon the thwarts of the boat, half-dead with chill and fatigue, and yet with a delicious sense of recovered life about me. It would not be difficult, surely, to attract the attention of the people on board the vessel, which, I could make out, was a small brig of untidy, outlandish rig. There was no watch kept on board, it seemed, for nobody appeared in answer to my hail. I shouted and screamed, but no one shewed. But in the stern of the ship was a window, lighting, no doubt, the principal cabin, and from this shone a certain dull gleam, as of a light carefully concealed.

I had wearied myself with shouting, and all my cries would be without avail to wake a sleeping seaman; but an unaccustomed sound might rouse

somebody to my assistance. Was there anything in the boat I could throw at the cabin window? Happily, I found, on feeling along the side of the boat, a lot of pebbles lying there, the boat having been used for getting ballast, no doubt; and arming myself with half-a-dozen of these, I began to throw them one by one against the window in the stern. I missed the first two or three shots; the next I aimed with more force and better direction, for it not only hit the window, but started one of the panes with a loud crash.

Instantly I heard a shrill scream, which seemed to be a woman's, and voices calling, then somebody rushed on deck with a light. Now was the time to shout again; I hailed my loudest, and presently a man's head appeared over the taffrail rail. There was light enough to see by now, for the mist had cleared, and the night was nowise dark; but the lantern the man carried and slung over the side dazzled both his eyes and mine, so that we could hardly make each other out. It reminded me of the old woman who lit her candle to see if the sun were rising. Still he saw that there was somebody in the boat, and he called out to me in some foreign tongue which was Greek to me, as I subsequently found it must have been in reality.

'For the love of Heaven,' I cried, 'hoist me up into your ship.'

He knew a little English, it seemed, for he rejoined in the same language, garnishing his speech with some of our most characteristic oaths: 'Go long with you; get out of that, you rascal.'

The wretch, so far from being eager to help me, wanted me to jump into the water again, it seemed. With the greatest difficulty, I refrained from flinging a stone at his head—though that wouldn't have been prudent under the circumstances—at the same time I didn't see what else to do. But just then I heard a female voice on deck, pitched in a high key; and a head, wrapped up altogether, except a pair of bright eyes, appeared beside the other.

'Eh bien,' it said, 'que diable allez-vous faire dans cette galère?'

'Oh, Madame,' said I, in the best French I could muster, 'I am a poor shipwrecked English officer.'

'Oh, if you are English,' she replied, 'yes, certainly, we must help you.—Monsieur le Capitaine, what are you about, to leave this poor gentleman in the cold?' Then she began to rate him in Greek; and the upshot was that he unwillingly set himself to work. In the first place, he loosened the rope, the painter that fastened the boat to the stern, and drew her along the side of the brig till she was under the davit tackles—the apparatus for lowering and raising the boats. These he lowered; and I was sailor enough to be able to hook the tackles on a rope at each end of the boat; and when that was done, the captain, aided by a couple of the crew, who now appeared, hoisted me up to a level with the deck.

'Safe at last,' I said to myself as I stepped on the firm planks, and then I began for the first time to wonder what had become of old Selim the Turk. Was he now feasting in Paradise, ministered to by dark-eyed houris? If so, I felt cold and miserable enough to wish myself in his shoes.

By this time, two or three more of the crew had turned out, and they stood around me, watching me as a colony of cats might an intrusive terrier dog. They were evil-looking ruffians—the sweepings of the Levant, to judge from their countenances—with

dark hair and gleaming eyes, sashes twisted round their waists full of knives and pistols. The leader of them, the fellow the woman had called captain, was a handsome-looking rascal, with long glossy black hair, slender moustache, and well-cut statu-esque features. He wore a little scarlet fez stuck on one side of his well-oiled locks, a caftan, and wide breeches, gathered in at the knees. He, too, had his scarf round the waist, a perfect armoury of weapons, the inlaid silver of which glittered in the lamp he still carried.

'What you want here?' he cried. 'What you do in my ship, you Inglesi?'

'I only want you to put me on board my own ship, the *Pera*.'

'Go on board yourself; you good swimmer; go that way.' He laughed a fiendish kind of laugh, and it was echoed by his comrades.

'I'll pay you well for it,' I cried; 'I will give you money. See!' I said, pulling out my sovereign, by way of convincing proof; 'all this to put me on board my ship.'

'Give me look,' said the captain, and I handed to him my solitary piece of gold. It was examined carefully by the light of the lamp, and passed round from hand to hand. The general impression appeared to be satisfactory.

'How many more you give?' cried the captain, not returning the coin.

I shook my head; 'Got no more,' I cried, slapping my empty pocket. The men looked at each other, and shook their heads too. They didn't look like people who were likely to be moved by motives of benevolence, and having the power of helping themselves to all I had, it seemed hardly likely that they would trouble themselves to put me anywhere but overboard into the sea. They all went forward earnestly talking together. I judged from their gestures that they were debating whether to throw me overboard or despatch me with their knives. Perhaps I took the most gloomy view of the matter, but I hadn't much to expect from these outlandish rascals. They ran no risk in putting me out of the way, and no doubt regarded me as a nuisance, to be abated in the easiest possible manner.

I looked anxiously about the deck. It was lumbered with coils of rope, barrels, broken cases, general rubbish, and lumber. The rigging hung loosely in untidy tangles against the sky. A lamp was burning forwards, about which the crew were clustered, the swarthy, evil-looking faces lit up by its rays. There was no binnacle light and no wheel; instead, a long heavy tiller stretched over the deck, and vibrated to and fro as the vessel swayed to the current. In front of the tiller was the hatchway of the after-cabin. There was a light here too, shaded and subdued. As I looked, a female figure appeared on the stairs, her form just shewing in the hatchway, and intercepting the feeble light that glimmered therefrom.

She looked anxiously along the deck at me and at the group of sailors.

'Oh, Madame,' I said in French, coming forward to the hatchway, 'will you have the kindness to interpret between me and these sailors here? I must be put on board the *Pera*; any moment I may be too late, and that will be ruin to me.'

'Hush!' she cried; 'I can do nothing. I look to you, *mon cher*, to you, an English officer, to protect me. Save me, and take me on board the English

ship, the *Pera*, and I will kiss your knees, the hem of your garment.'

I had now an opportunity of more narrowly observing this mysterious female. She had thrown aside her *yashmak*, or veil, and her face, which was looking upwards, was fully exposed to the moonlight. It was a face that bore traces of beauty, but of beauty that was faded and withered. The mouth was full of decision and power, and seemed to indicate person of distinction and authority.

'Are you then a prisoner among these ruffians?' I whispered to her.

'I am, and I cannot— See! I will intrust my secret to you, who are an English officer and gentleman: I am the wife of Achmet Pacha.'

As soon as she had said that, I felt that I was acquainted with the situation. The story of the wife of Achmet Pacha was in every one's mouth. Usually, the scandals of the harem are never divulged beyond their own walls, or are only known dimly and by inference and innuendo. But this was a flagrant public matter, that had overpowered the natural reticence and cunning of the Turk. Divested of all extraneous matters, the story simply amounted to this. The pacha and his wife had quarrelled, and the latter had run away. She was the daughter of an Ionian Greek, with a great reputation for beauty and cleverness. Having been born before the cession of those islands to the Greek kingdom, she imagined herself entitled to the privileges of a British subject, and had thrown herself upon the protection of the English ambassador. She had encamped in the court-yard of the Embassy, to the immense disgust and derangement of that stately establishment. The ambassador had, however, decided that she was not entitled to be sheltered under the aegis of the British flag, but she had sufficient notice of his decision to enable her to take refuge in disguise among her own countrymen.

After that, Madame Achmet was lost to sight altogether. The Sublime Porte was furious. She was reported to have carried off jewels of immense value, and papers of the most compromising nature relating to high officials. All the outlets of the city were watched, and every sea-going vessel was searched; but the police force of the Porte have no Inspector Bucket among them, and no one was surprised to find that the lady had, to all appearance, escaped.

But here she was, after all, within the very clutches of her enemies, if they only knew it. Madame told me the history of it in a few words. She had hired this vessel, to take her to Smyrna, I think she said, where she hoped to get on board a French or English ship. But under one pretext or another, they had put off the voyage from day to day. She now believed that they were negotiating her sale to the Porte, through some of their friends on shore. 'They have heard, too, that I have jewels,' whispered Madame, 'and they have threatened me about them; but I will never give them up—never!' She here gathered her robes about her with an air of dignity, and revealed the silver handle of a long knife she carried in her girdle.

For me, I own that I received her confidence with a very bad grace. My heart was set upon getting on board the *Pera*, and all the intrigues and mysteries of the Sublime Porte seemed to me a matter of the most trifling consequence compared

with my getting back to Malta to save my leave. I was blind to the romance of the situation, but was very much alive to the danger of it. With such a prize on board, it was hardly likely that this crew of ruffians would permit me to leave the ship, to betray them, possibly, to the authorities. I could do nothing for Madame Achmet, for I couldn't even save my own head.

After my long immersion and struggles in the water, I was faint and weary beyond expression. I was entirely unarmed, and quite at the mercy of these desperadoes. This I told Madame Achmet; and she hid her face in her robe when she heard it. 'Stay!' she said, looking up; 'I will bring you something that shall warm your heart.' She retreated to her cabin, and presently came up again, holding in her hand a little ruby goblet full of some powerful cordial. I swallowed it, and warmth returned to my heart, the blood began to circulate freely over my whole frame.

'Now, if I had a weapon,' I cried, 'I could shew fight.'

Then I heard the stealthy tread of men on the deck. The crew had finished their debate, and were coming aft in a body. The captain broke off from them, and came towards us with a scowling face. He said something to Madame, ordered her down to her cabin, probably, and she retorted vehemently, so that in a moment a fiery quarrel blazed out between the two.

At last the captain seemed to lose all control of his passion; he seized Madame by the shoulders, and endeavoured to thrust her down the steps into her cabin. She screamed to me for help, and although I was very reluctant to mix myself up in her affairs, I could not stand quietly by and see a woman ill treated. I seized the man by the throat, therefore, and pinned him against the hatchway; and as he struggled to get his hand to his sash, to draw some weapon upon me, I gave him a blow or two in the ribs, to quiet him; Madame began to scream; the crew came aft with a rush, and I presently found myself lying on the deck, with half-a-dozen gleaming knives playing about my throat. I did not doubt but that it was all over with me now; and indeed I should probably have been killed there and then, and thrown into the sea, but for the intervention of a new danger, that menaced us all alike. For in the still night, the swift but measured rush of oars could be heard, and a long galley, manned by rowers wearing the uniform of the Padishah, and carrying half-a-dozen or more of armed cavasses of the Porte, could be seen sweeping up to our vessel.

The summary justice of the Porte is still administered in the old rough way in all matters that concern the sacred institutions of the harem. These things are never talked about, but are nevertheless well understood. If those myrmidons of the sultan found on board Madame Achmet and a young English officer, the fate of both would have been quickly decided. The lady in a sack, the gentleman with a cord round his neck, would soon have been food for the fishes of the Bosphorus. And to make all secure, and avoid bother, the ship and her crew would no doubt have been sent to keep us company.

The approach of this galley then seemed to infuse us with a sense of a common danger. Madame retired to her cabin; the crew flung themselves flat on the deck; one of them, with a knife

placed at my throat, menaced me with instant death if I moved or spoke. The captain alone stood upright, pacing to and fro with pallid face, watching the galley as she drew up with rapid strokes.

A stern hail was given from the boat; and the captain, with submissive voice and mien, stood at the bulwarks, and replied to the questions of his interrogator. The end of it seemed to be that the captain was ordered to heave over a rope and lower a ladder at the gangway.

He turned round with a livid face to the crew, as if to seek their advice. Madame's head appeared in the hatchway vehemently signalling to him with her fingers. The galley swept down by the current lay to at the stern of the brig, waiting for the rope to be heaved, for the ladder to be lowered.

In the imminence of the danger, all thought of me had been lost; the man who guarded me had joined his companions in the shadow of the bulwarks, where they whispered together in hurried consultation. The best chance of safety for them, evidently, was in complete submission. They must lose their prize, they must give up their passengers, they must see themselves robbed and plundered by the hated Turk, but they might at least save their skins. So they reasoned, no doubt; and they heaved over a rope, and the galley was presently made fast against the side of the brig.

An English boat's crew would have swarmed up the ship's side in a moment, but the Turks are more leisurely: there was some fuss about rigging out the ladder in the gangway. While this was going on, I heard of a sudden the hoarse roar of steam and the beat of paddle-wheels; and looking over the ship's side, I saw that a big steamer was coming down full speed. She was the *Pera*. On board that ship a cot was slung for me, there were portmanteaus waiting to supply me with dry warm clothes, a steward with possibilities of hot brandy-and-water, and a vista beyond of cool shady barrack-rooms in Malta, warm greetings from comrades, bugle-calls and rolling drums, and the glow of the dear old red coats; and yet all divided from me by a gulf impassable.

Down the tide she came, with stately, steady swing, the steam roaring from her funnels, the lights shining from her portholes casting long pencils of brightness on the waters, churning the waves with her paddles, and leaving behind her a long wake of white boiling foam—a bit of Old England afloat on these alien waves, a bit of the nineteenth century, of warm familiar life; and here was I as completely cut off from it as if I had been a thousand miles away, a thousand years removed. I heard the clash of arms on the other side as the cavasses made ready to mount the vessel's side; I saw the Greek woman standing in the hatchway, with eyes gleaming, pale compressed lips, and a knife held in her clenched hand. Of a sudden a thought struck me—a possible hope of escape both for her and me.

The boat which had been the means of saving me still hung suspended on its davits over the water; I ran to the woman, seized her by the arm, and bade her follow me to the boat. There was no time, nor was I sufficiently acquainted with the process to lower her gradually by the falls; but if, by a simultaneous stroke of the knife, we could sever the ropes that supported her at either end, the boat would drop into the water, possibly

the right side uppermost. The woman divined my purpose in a moment, sprang into the boat at the stern, whilst I placed myself in the bows. Here there was an awkward hitch. I couldn't find my clasp-knife; when I found it, the sea-water had rusted it—I couldn't open it; I tore at it with my nails, with my teeth. At last I got it open. Now, if we failed to sever the rope that kept suspended each end of the boat at the same moment, she would drop from one end, and we should be shot headlong into the water. The woman saw this as well as I, and watched every motion of mine with eyes of fire.

We began simultaneously to saw the ropes with our knives. Hers was a large and formidable blade, whilst mine was the ordinary British clasp-knife. I thought that my advantage of superior strength would be countervailed by the greater efficacy of her weapon; but it seemed that her knife, keen enough at the point, was dull and blunt at the edge: the rope on my side was giving way, and hers was not half sawn through. Only one resource presented itself. Twisting my legs round the foremost thwart of the boat, I held on to the tackles above with my hands, supporting the weight of the boat with my sinews and muscles. Every joint in me cracked, and I was drawn out as one tortured on the rack. I could only sustain this for a moment; but in that moment my partner finished her work; my muscles gave way at the same instant, and we dropped into the water with a tremendous splash, but the right side uppermost. The fall sent us both prostrate into the bottom of the boat; but I recovered myself in a moment, and seizing a pair of oars, which were happily in the boat, I began to pull vigorously athwart the track of the *Pera*, which was coming down full speed upon us. Heads appeared over the side of the brig, shouts were raised, and shots were fired, the bullets singing about our ears, and raising little spouts of foam around us. These only did us service in attracting the notice of the watch on board the *Pera*. I saw half-a-dozen heads on the look-out over her bows; but she would never stop for us unless I made her; and fully resolved to gain the deck of the *Pera* or perish in the sea, I drove the bow of the boat straight into the track of the advancing ship. Men shouted, the captain frantically vociferated; the engines were slackened, stopped, reversed; still I maniacally stuck to the front of the advancing mass. She glided down upon us, we touched her port-side, and cracked like an egg-shell.

A dozen ropes had been thrown over the side, and I grasped one of these like grim death, and was pulled up into the ship. I had no time to think of what became of Madame; but I found afterwards that one of the sailors had caught her clothes with a grapping-hook, and hauled her out of the water like a bundle of rags.

But it was worth all the torture and despair of that night to stand upon the deck of the *Pera* safe and sound. Madame and I were the subject of a good deal of curiosity, and not a little quizzing on board. It was currently reported that we had eloped from the sultan's seraglio; and a good deal of surprise was insinuated to me by the young men that I hadn't picked out a more blooming specimen. But I kept my own counsel, and have never told the real story to anybody until now. Madame Achmet availed herself of a short stay at

Malta to rig herself out in full European costume, and I had the pleasure of escorting her to the theatre and other places of amusement; she also graciously accepted an invitation to a luncheon given by the officers of our regiment, when she amused us all amazingly by her graphic sketches of eastern life. On leaving for Paris via Marseille, she presented me with a very handsome diamond, one of the splendid collection of jewels she was fortunate enough to carry off with her; and she gave to our mess a very handsome silver salver, which still remains to bear witness to the truth of this plain unvarnished tale.

WALKS IN SUBTERRANEAN ROME.

THREE hundred years ago, there lived in Rome a youth named Antonio Bosio. He was not by birth a Roman; he was a native of Malta, and dwelt at Rome with his uncle. An accidental circumstance gave young Bosio a turn for archaeological investigation. One day in 1578, some labourers, digging in a vineyard about two miles out of Rome, came on a cavern which, in remote times, had been used as a place of sepulture. The news of the discovery spread. There were traditions regarding subterranean cemeteries and places of Christian worship, but, except as regards a few crypts connected with churches, any distinct knowledge on the subject was lost. Curiosity was now aroused, and various learned inquiries were instituted. Among all who attempted to prosecute investigation respecting the ancient Roman catacombs, none took up the matter more zealously than Bosio; in fact, he devoted his life to subterranean researches. When he heard of any diggings going on, he flew to the spot, and endeavoured to discover if there was an entrance to any old cavern. If successful, he would, candle in hand, dive into the bowels of the earth to find out the direction of the passages. Occasionally, he ran a serious risk of losing himself; and but for adopting the precaution of carrying a supply of candles, to light one after the other, he would certainly have perished in these dismal, though very interesting, catacombs.

Bosio was an enthusiast. He was also a scholar with cultivated tastes, and his enthusiasm directed him to a pursuit which became the business of his life. From the age of eighteen, he spent six-and-thirty years in subterranean explorations, and in writing books about his discoveries. To these works of his, archæologists turn with gratitude and astonishment. His diligence offers a fine example of what may be done by a person possessing the means to devote himself to what is likely to prove instructive and rationally amusing—a lesson to those who dawdle away existence in walking idly about the streets, or, it may be, in degrading frivolities.

It must be admitted that Bosio had a splendid and hitherto uncultivated field of observation. He had the honour of going first into a department which has since had many patient and learned explorers, among whom must notably be mentioned De Rossi, whose works are well known. England has not altogether been behind in adding to the literature of the Roman catacombs. Two years ago, it gave us an invaluable treatise, partly compiled from the writings of De Rossi, styled *Roma Sotterranea*, by Rev. J. Spencer Northcote, D.D. and Rev. W. R. Brownlow, M.A. Consisting

of an historical account of these remarkable excavations and their uses, the work affords a comprehensive and lucid narrative ready to the hand of the inquirer; and although we may not agree with the writers in all their ecclesiastical deductions, every one will admire the spirit in which they have jointly executed a difficult archaeological undertaking.

To understand the nature of those cavities, on which Bosio lavished the enthusiasm of a lifetime, and that have been laboriously described by the genius of De Rossi and others, we require to know something geologically of the territory underneath Rome and its environs. At a prehistoric period, this part of Italy had been under fresh water, which along with igneous action had formed masses of limestone-rock known as tufa, or travertine, intersected with masses of that species of cement called pozzolana. Subsequent volcanic revolutions burst asunder the mounds which hemmed in the water; hills were thrown up—the famous ‘seven hills’—and by the valley of the Tiber, which assumed its present form, there took place a natural drainage of the surface. When in long after-ages Rome came to be built, the inhabitants sought for materials beneath their feet. Cement for their bricks was found in those vast repositories of pozzolana—still known as Roman cement—which were scattered about in all directions. Thus, the catacombs were begun, and were continued and extended by quarrying for the travertine, to be used as stone for the more palatial order of buildings. Medieval and modern Rome were built of this kind of rock. It is hard, brownish gray in colour, and takes on a smooth surface, but honey-combed all over with small cells, indicative of having been formed under fresh water abounding in carbonate of lime, along with vegetable and animal matter.

Next, we have to consider the ancient methods of disposing of the dead. Among the Romans, burial in tombs or sarcophagi was not unknown, but the more common practice was to burn the bodies of the deceased, and gather the ashes into small urns—earthenware jars with lids—which were deposited in vaults that could be conveniently visited by relatives. Some of these vaults, called columbaria, from the niches on the stone shelves resembling pigeon-holes, are still shewn as a curiosity to strangers visiting Rome. The ancient Hebrews reverentially interred their dead in tombs, of which we have numerous notices in Scripture. The Jews who, under protection of the Roman law, settled in Rome, were allowed to continue their old usages, both as regards public worship and interment. Their tombs, in caverns or elsewhere, were generally left unmolested; for disrespect for the dead was by no means among the failings of the Romans with all their heathen notions. The bodies of persons put to death by judicial sentence were even respected, and were given up on request to sorrowing relations. It will be remembered that Joseph of Arimathea, on begging the body of Jesus from Pilate, had the pious request granted. In all this, as we think, there was a redeeming trait of tenderness among the stern old Roman authorities.

When, about the middle of the first century, converts to Christianity made their appearance in Rome, they were viewed as only a sect of the Jews, and none troubled themselves about their peculiar faith or usages. At his lodgings, Paul

preached without molestation. Covered by the same immunity, the Christians buried their dead in such subterranean recesses as they selected. Soon, however, through the denunciations of the Jews, the Christian religion was proscribed; persecutions began; the apostles Paul and Peter suffered martyrdom; and the assemblages for worship, which had for some time taken place openly, were now held secretly in the catacombs, surrounded by the decaying bodies of the dead. For more than two hundred and fifty years, with some intervals of toleration, the Christian community in Rome made these dreary caverns a place of resort for worship and sepulture. Thither the bodies of martyr after martyr were faithfully carried, and entombed with affection and the observances of religion. Of course, care was taken to avoid notoriety. Descending by trap-doors and flights of narrow steps, leading from private dwellings or slips of vineyard, the mourners gained the dark corridors beneath, carrying on their shoulders, it might be, the mutilated remains of one they loved, and whose name, in after-ages, would take a prominent place in lists of martyrs and confessors.

The early diggers for pozzolana and travertine had not been particular in their excavations. They had, however, cut their way in vaults and passages over extensive districts without and within the city. In an easterly direction near the Appian Way, their labours appear to have been indefatigable. Not contenting themselves with keeping to one level, they dug out passages in three distinct stories, reaching from ten to fifty feet beneath the surface, the whole connected with rudely formed flights of steps, and having air admitted by holes at distant intervals. Through means furnished by the more wealthy Christian converts, numerous improvements were effected. The passages were enlarged, the crypts rendered more regular in form, and more suitable for receiving the bodies of venerated relatives and martyrs. One is afraid to specify the extent to which the complicated and triple series of passages were carried, for it seems almost incredible. According to a good authority, there are estimated to have been altogether upwards of three hundred miles of catacombs. No wonder that Bosio, in his long walks, should have run the risk of losing himself in the vast and lugubrious labyrinth.

By the conversion of Constantine, the protracted persecutions ceased in 312. The Christian community were now at liberty to build churches over the crypts where the martyrs were entombed. Hence arose, at different ages, many of the existing churches in and about Rome, that of St Peter's included. Yet, for some time after Christianity was legalised, there continued a practice of burying in the subterranean vaults, in order to lie near the bodies of those deemed to be saints; though, as a writer has sensibly observed, the best way to enjoy the company of saints is to try to live like one. An over-zealous regard for the mortal remains of martyrs led to a new phase in the condition of the catacombs. It had been customary to bury the martyrs in the second story, and now, to accommodate the flocks of pilgrims who crowded to their shrines, commodious stairs were constructed, and such alterations otherwise took place as to destroy hundreds of tombs, and materially change the aspect of those vaults held sacred to venerated remains. The great improver, if we may so call him,

was Damasus, elected Bishop of Rome in 366, from which year, until his death in 384, he did much to adorn the catacombs, with a view to honouring the martyrs, and accommodating the host of pilgrims who came from all parts of Europe to pass hours of devotional exercise in the subterranean recesses.

Former attempts at ornamentation were now far outdone. By means of built walls and arches, and the introduction of marble slabs covered with Latin inscriptions, also by providing stone altars and other appurtenances of medieval worship, the more sacred class of vaults were given the appearance of regular mortuary chapels. By the best artists the walls were adorned with coloured paintings, which, though damaged by time and devastation, are still in their decay prized by antiquaries, as shewing the costumes and attitudes of churchmen in the fourth century. In the work of Northcote and Brownlow, we are favoured with specimens of these wall-paintings; likewise with pious inscriptions, in which Damasus commemorated the names and sufferings of martyrs entombed in the catacombs. It is proper to say, in relation to wall embellishments, that in some of the catacombs paintings are shewn, said to be as old as the era of persecution in the second century. They represent Scripture subjects, chiefly from the gospel narrative. The inference that they symbolise doctrines and church observances at the early period mentioned, seems purely imaginative. At best, they are interesting as specimens of an exceedingly old style of Christian art.

The learned St Jerome—Hieronymus—describes his feelings as a schoolboy, when, along with youths of his own age, he ventured into the subterranean galleries. His visits could not have been long before the work of renovation was undertaken by Damasus. He speaks of going on Sundays to see the tombs of apostles and martyrs, and of the solemn darkness which prevailed in passages lined with receptacles full of remains of the dead; 'the very silence,' he adds, 'fills the soul with dread.' His account corresponds with what other old writers have said respecting the ordinary method of sepulture, and what, indeed, is still observable. The bodies were not usually sunk in graves, but placed in excavations, the size of coffins, in the walls, tier above tier; the longitudinal opening being closed with a stone, which was cemented all round with pozzolana. Thus each body lay in a kind of stone box in the wall, and, by means of particular marks or inscriptions, could be easily identified. So long as this kind of mural interment was practised, the duty of excavating tombs was assigned to an inferior order of clerics named *fossores*, a word which may properly be translated grave-diggers. We are led to understand that, not unlike many modern professionals in the parish-beadle and grave-digging line, the fossores needed to be looked after; for, under the private influences brought to bear on them, they were apt to encroach on the resting-places of martyrs—not even sparing works of art to accommodate their customers. Damasus was so vexed by these loose proceedings, that he ordered his tomb to be constructed in open ground, 'being,' as he lets us know by an inscription, 'afraid of disturbing the holy ashes of the saints.'

Besides the information of various kinds which one gathers from regular inscriptions in the catacombs, much may be learned respecting the names

as well as the sentiments of people who visited Rome fifteen hundred years ago, by a careful examination of casual scribblings on the walls. These scribblings, called *graffiti*, are numerous beyond conception. Thousands of pilgrims who haunted the shrines, could not, in the exuberance of their piety—perhaps sometimes of their vanity—refrain from scrawling their names, prayers, invocations, and expressions of delight. The earlier class of names are of an old Latin cast; then, at a higher level, where there were vacant spaces, the names degenerate into Italian; so that before our eyes is seen the transition of one language into another. The Roman character is employed throughout. Occasionally, we observe Greek letters and symbols, suggestive of Byzantine peculiarities. A volume might be filled with the graffiti of the Roman catacombs. What a record it would be of names and affections, wishes and weaknesses, long relegated to the dimly mysterious past!

But we must tell how the catacombs sunk into that forgetfulness from which they were rescued by Bosio. Things went on pretty flourishingly with them as they had been left by Damasus—the crowding of pilgrims being tremendous—until 410, the year in which Rome was sacked by Alaric and the Goths. That was but the beginning of disaster. There was an irruption of Goths under Vitiges in 537, and great was the havoc in the cemeteries. The next devastation was committed by the Lombards in 756. These several invasions so seriously checked the business of the fossores as nearly to put an end to entombment in the catacombs. The temptation to bury in that quarter no longer existed. Successive popes after the first, but more particularly after the second, invasion of the Goths, caused the relics of the martyrs to be dug up and deposited in churches, where they could be more carefully guarded. Ceasing to be resorted to by pilgrims, or to be used for purposes of interment, the catacombs were shut up as a public danger and cause of offence, for so little reverence was entertained for them after the shrines had disappeared, that in some places they were used as sheds for cattle. They may be considered as having dropped into oblivion in the tenth century; and thus they remained until they were taken in hand archaeologically by Bosio.

In the present day the common method of seeing the catacombs is to visit the church of San Sabastiano, situated about two miles out of Rome on the Appian Way. Here, by a flight of steps, we descend to the cemetery of St Callixtus. A few years have elapsed since we were able to visit this and some other portions of Subterranean Rome to which strangers are allowed access, since which period little change has probably taken place. At the cemetery of St Callixtus there is a group of galleries on three different levels, connected by stairs, and most irregular in design, according to the nature of the tufa which has been penetrated or other exigencies. In the passages, which diverge confusedly in different directions, are seen excavations for wall-sepulture, some large and others small. The more capacious crypts are said to have been the place of sepulture of distinguished Roman families in the third and fourth centuries. At several places, where apparently there had been shrines, graffiti are observable on the walls, and we are told that here assemblages for public worship had taken place in times

of persecution. As the floors, on various levels, are by no means smooth—here and there two or three steps being worn to a slope—the walk through the group of catacombs is not very pleasant. The air admitted by shafts is, however, free, and no difficulty in breathing is experienced.

In visiting this and other catacombs, small inconveniences are not thought of; nor do we minutely inquire into the accuracy of what is related by the guides who take charge of visitors. In a general way, we are conscious of the great antiquity of the excavations. The mind reverts to the early struggles of Christian converts in the heathen world. We think of Peter and Paul: we think of the ‘noble army of martyrs.’ Events eighteen hundred years old crowd before us. Connecting the past with the present, we, after these walks in Subterranean Rome, return to the light of day with an enlarged knowledge of early ecclesiastical history. As whatever extends the compass of our ideas is salutary, we recommend our friends, in their next Italian excursion, not to go too hastily over the ground, but endeavour to spend a day or two in the catacombs on the Appian Way, taking care beforehand, if possible, to peruse the *Roma Sotterranea* to which we have drawn their attention.

W. C.

A L B U M S.

THOSE who can look back for half a century, will remember the rage there was in their youthful days for albums. Did any thoughtless young lady exhibit her drawings after dinner to a select circle of friends in the drawing-room, she was immediately besieged by each in turn: ‘Do allow me, dear Miss Crayon, to send you my album for a contribution;’ or, if a gentleman was suspected of amateur versifying, the entreaties were innumerable for one of his original and beautiful poems. It has been truly said that legion was not a name multitudinous enough for them; literary men crouched under their tyranny, young maidens wielded them as rods of iron. We may well ask into what limbo of forgotten things are these odd volumes stored away? Splendid books they were in their day, bound in rich morocco and gold, and often containing contributions from Scott, Moore, Montgomery, and Praed; whilst Prout’s beautiful sketches adorned their pages side by side with other artists. The photographic albums have superseded them, a much less interesting thing to those who turn over the books on a drawing-room table.

Taking up one of the old albums, it is rather a melancholy task to look through it: here is the writing of a friend who is no longer in existence; there the name of one who has long ago ceased to be numbered among your acquaintance; and there was great truth and force in the words of Madame de Staël, who, when a young son of the poet Goethe’s called on her, and presented his *Stammbuch*, or album, asking her to contribute, she threw the book on the sofa, exclaiming: ‘I do not like these mortuary tables.’ Such, indeed, they too often are, though we may not, like her, dislike the tender recollections they invoke.

This very volume was one of great interest, the opening verses were by Goethe himself, and may be thus translated:

Hand to the patron the book, and hand it to friend and companion;
Hand to the traveller too—rapidly passing away;
He who with friendly gift of a word or a name
thee enriches,
Stores up a noble treasure of tender remembrance
for thee.

Schiller had contributed the following sentiment, marking the strong attachment which existed between him and Goethe:

‘Cherished boy! Thou art the favourite of Fortune, for she gave thee the first and most precious of gifts to rejoice in the glory of thy father. Now thou knowest only the loving heart of a friend. When thou art ripened into manhood, thou wilt understand this; thou wilt then go back with feelings of pure love to the bosom of the excellent, who at present is merely the father to thee. Let him live in thee as he lives in the eternal works which he, the only one, produced for us in everlasting bloom; and may the heartfelt bond of reciprocal inclination and confidence, which united the fathers, continue to unite the sons.’

One of the most original and voluminous of all known albums was in the possession of Goethe, but disappeared at his death. It had belonged to the Baron de Burkana, a man who had travelled everywhere: he was born at Aleppo, and had been brought up at the court of the Emperor of Austria, dying at Vienna in 1766. Having met with an immense variety of distinguished persons during his life, he had collected three thousand five hundred and thirty-two contributions of esteem and friendship in prose and verse, compliments, maxims, epigrams, witticisms, and anecdotes. He himself wrote the dedication in French and Latin in the following terms:

‘This temple of piety, virtue, honour, friendship, and faith, is consecrated to a faithful and eternal remembrance: all who are pious as Eneas, strong as Hercules, friends like Pylades, faithful as Achates, enter, and honour it with your presence; you are invited by

BARON DE BURKANA, Aleppo, Syrian.’

A few extracts may be given, all of a very complimentary kind to the owner of the book. Montesquieu says of him, that, ‘like the sun, he has seen all parts of the world.’ The Prince de Ligne calls him ‘the illustrious and unwearied galloper over the world, and prays him to salute the Great Mogul and the king of Mononotapa from him when he next crosses their dominions.’ Voltaire remarks how happy he is to inscribe his name in the album of ‘a man who belongs to every land, who speaks all languages, a true cosmopolite, who is a Frenchman in Gaul, a Spaniard in Iberia, a German in Germany, and an Englishman in Great Britain.’

In the same flattering strain, Pingré assures him that ‘all Paris is filled with admiration for one so learned, the glory of the Arabian nation;’ and the Chevalier d’Eon, then a captain in the dragoons, and secretary to the French Embassy in Russia, is charmed to have met with the baron for the third time in his travels, and hopes to see him again at Constantinople or Pekin. A canoness of Paderborn, in Westphalia, declares that she has long sought in vain for the phenix of the ancients, and has at length found it in the person of the Baron de Burkana. Another lady calls him ‘the Mentor of the East,’ and a second, ‘an industrious bee

which makes precious honey.' The names of Metastasio, Crebillon, Arnaud, Zaccaria, and Gessner were among the names inscribed in these pages.

The use of albums is by no means modern; they acted as a kind of introduction among learned men. 'It is the name,' says an old dictionary, 'given to a little register or book carried about by savants. When they arrive in a city either as travellers or residents, they call on their learned friends, and present them with their album amicorum, praying them to write something in it, that they may possess their autograph. What is inscribed generally consists of a device, or some sentence, or a compliment to the owner.' What sums would the collectors of autographs now pay for the album of Erasmus or Luther! Here is an extract from a celebrated album of 1556, which belonged to a Pomeranian gentleman, Daniel de Behr, in which the Duke Augustus of Brunswick-Lüneburg, then a student at the college of Wittenberg, wrote this maxim in Latin: 'The knowledge of the most beautiful things is not arrived at by idleness, but by work; not by looking on, but by study; not by vain wishes, but by steady labour; not by money, but by prayer.'

His brother Ernest contributed the following on another leaf: 'You will be happy if you hope in Christ, bear the trials of life patiently, and study to be ready to die well.' Barclay interleaved with blank paper a copy of the treatise *De Constantia* by Justus Lipsius, and converted it into an album amicorum, which was honoured with the signatures of fifty of the most celebrated men of the day, including that of Lipsius himself, Casaubon, Rubens, and Morel. The learned Madame Dacier, who was as much celebrated for her modesty as for her erudition, was requested by a German traveller to add her contribution to his album. She only gave him a verse from Sophocles, apologising for her unwillingness to place anything of her own composition among those of his learned friends by saying that 'Silence is the woman's ornament.' A famous botanist, James Petiver, a friend of Sir Hans Sloane, and a hater of the fair sex, thus describes his bachelor condition by signing his name in an album with this designation: 'From the Goat Tavern in the Strand, London; in the thirty-fourth year of my freedom, A.D. 1697.' The German students, when they leave college, are accustomed to exchange album-leaves of engraved and ornamented paper. In a few years, the writers are too often forgotten, as occurred to Mr Crabbé Robinson, who possessed one: 'I shall never forget you, and I expect the same from you,' it said: but the memorial failed even to bring the writer to his mind.

Sixty years ago, when travelling in the Highlands was not the easy affair that steamboats have made it, those who visited Staffa had to sail across the stormy Mull in small boats, and to put up at one of four hospitable houses, as there was no inn fit for gentlemen. At each of these the travellers were made most welcome; but Ulva House being six miles nearer Staffa, was the most frequented of all, and Mr M'Donald, the laird of Staffa, was the very impersonation of Highland hospitality. When Walter Scott was expected to visit Mull, intense anxiety was felt as to which of the houses would have the privilege of entertaining him. He was then known as the poet, not the novelist, and was

touring in the Highlands with his young and engaging wife. He chose Ulva; and as the proprietor kept the usual album for his guests to inscribe their names in, Scott wrote these lines on the laird of Staffa:

Staffa! king of all good fellows,
Well betide thy hills and valleys;
Lakes and inlets, steeps and shallows;
Mountains which the gray mist covers,
Where the chieftain spirit hovers,
Pausing as its pinions quiver,
Stretched to quit this land for ever!
May all kind influence rest above thee,
On all thou lov'st, and all who love thee!
For warmer heart 'twixt this and Jaffa,
Beats not than in the breast of Staffa!

Dr Macleod, from whom this is taken, says he quotes from memory. The Ettrick Shepherd also left a memento in the album, but one less complimentary to the island than Scott's:

I've roamed 'mong the peaks and the headlands of
Mull;
Her fields are neglected, uncultured, and weedy;
Her bosom is dark, and her heaven is dull;
Her sons *may* be brave, but they're horribly
greedy.

An indignant native thus replies:

O Shepherd of Ettrick, why sorely complain,
Though the boatmen were greedy of grog?
The beauties of Staffa by this you proclaim
Were but pearls thrown away on a Hogg.

Whoever now possesses that Ulva album, would probably be able to select from its pages many memorial lines of interest.

Those who have travelled in the Crimea may have heard of a singular woman whom they called the Canoness Kopsel, but who was in fact a Frenchwoman of the name of Jacquemart. Owing to the number of visitors who sought her out from curiosity, her album became an interesting study. She had left her native country at the age of sixteen, to be a governess in Russia, and after some years, had retired, from a circle of warm admirers, to shut herself up in a most solitary part of the Crimea, amusing herself with the study of geology, painting, music, and poetry. Dressed in a long brown petticoat and a waistcoat, she might almost have been taken for a man; and her cottage had but one room, which served for dining and bed room alike. Around it were hung a guitar, an easel, a collection of minerals, some articles of *vertu*, and arms. She was obliged to have pistols always at hand, as her life had been attempted. One day, an unknown, young, and beautiful woman passed a whole day with her without betraying her incognita. Rather annoyed, Mademoiselle Jacquemart laughingly said: 'Queen or shepherdess, tell me your name, that I may recall one of the most pleasing remembrances of my anchorite's life.'

'Ah, well,' replied the unknown, 'give me your album quickly, and you shall know a sincere admirer of your goodness.'

She wrote some lines in it, and hastily departed, while the canoness read the following quatrain, improvised in her honour, and signed the Princess Radzivil:

Reine ou bergère, je voudrais
Dans ce doux lieu passer ma vie,
Partageant, avec vous, amie,
Ou ma cabane, ou mon palais.

Those who visit Luxor, in Lower Egypt, should by all means see the amusing album of Dr Lepsius, a learned German, who has travelled much. In the hieroglyphical title-page, he records, in characters taken from the monuments, with some modern adaptations, how he came out to Egypt under the patronage of the king of Prussia. There is a clever, but by no means heavy dissertation on Egyptian history and antiquities, and a request that travellers will record any observation they have made, so that the book may in time prove a valuable record. Unfortunately, this suggestion has not been well carried out, as the most part of the contributions are poetical effusions in various languages about Thebes and Karnak.

When Mr Adolphus the barrister was asked to write in the album of Miss Bartley, the daughter of the actor, he gave her the following appropriate lines :

'Give me, from thy exhaustless page,'
I cried, 'great father of the stage,
Such features as I shall require
To shew the maid whom all admire.'
'Take,' he replied, 'the face and mind
Which I've bestowed on Rosalind ;
Fair Beatrice's wit and sense,
With Imogen's sweet innocence ;
Portia's exalted energy,
Poor Desdemona's constancy ;
Nerissa's archness ; half concealing
Lovely Cordelia's filial feeling ;
To shew her charms in proper light,
You must display in colours bright,
Miranda issuing from her cell,
With step and song of Ariel.'

'Thanks, gentle Shakspere, thanks,' I cried,
My utmost wishes satisfied ;
Each lovely trait describes her partly ;
Combined, they form Sophia Bartley.

The name of the owner of the album very often supplied a theme ; one of Montgomery's, beginning with, 'Mary, it is a lovely name,' is too well known for quotation ; the following, by Charles Lamb, on Frances, may not be so familiar :

My feeble Muse, that fain her best would
Write, at command of Frances Westwood,
But feels her wits not in their best mood,
Fell lately on some idle fancies,
As she's much given to romances,
About this self-same style of Frances ;
Which seems to be a name in common
Attributed to man or woman.
She thence contrived this flattering moral,
With which she hopes no soul will quarrel,
That she whom this twin title decks,
Combines what's good in either sex ;
Unites—how very rare the case is !—
Masculine sense to female graces ;
And, quitting not her proper rank,
Is both in one—*Fanny and frank.*

It was a common practice for quidnuncs, ambitious dowagers, and aspiring damsels pertaining to the order of blue-stockings, to pester Mr Thackeray at the close of a lecture to insert his autograph in an album, a request with which he was not often willing to comply.

On one occasion, an album was placed before him by a young fellow, who thought to tempt him by calling attention to the fact, that the signatures of several distinguished musicians were in the same book, and that, therefore, he would be in very good company. 'What, among all these fiddlers !'

exclaimed Thackeray, with pretended raillery. Having uttered the somewhat brusque phrase, he could not well do otherwise than satisfy the desire expressed, but he could not be prevailed upon to write more than his simple signature. On another occasion, a young lady, who had already obtained the contributions of many well-known authors, was more fortunate. He took the book home to his hotel, in order that he might have time to scan the contents. Among these, he discovered the subjoined lines :

Mont Blanc is the Monarch of Mountains—
They crowned him long ago ;
But who they got to put it on,
Nobody seems to know.

ALBERT SMITH.

Under these lines, Mr Thackeray speedily wrote the following :

A HUMBLE SUGGESTION.

I know that Albert wrote in hurry :
To criticise I scarce presume ;
But yet methinks that Lindley Murray,
Instead of 'who,' had written *whom*.

W. M. THACKERAY.

With two elegant little poems of De Lamartine, this slight sketch will close :

*Sur cette page blanche où mes vers vont éclore,
Qu'un souvenir parfois ramène votre cœur.
De votre vie aussi la page est blanche encore,
Je voudrais la remplir d'un seul mot, le bonheur.*

*Le livre de la vie est un livre suprême,
Que l'on ne peut ouvrir ni fermer à son choix,
Où le feuillet fatal se tourne de lui-même,
Le passage adoré ne s'y lit qu'un fois,
On voudrait s'arrêter à la page où l'on aime,
Et la page où l'on meurt est déjà sous les doigts.*

L E A F - D R I N K S.

THE heathen Chinee may vow there is but one tea, and Europeans do not care to contradict him ; nevertheless, there are millions of people in the world who think but meanly of the Celestial beverage, rejoicing, as they do, in a leaf-drink of their own, to their taste infinitely superior.

Nearly a century and a half ago, a traveller in Peru, recording his experiences, wrote : 'A common liquor in this country is *mate*, which answers to tea in the East Indies, though the method of preparing and drinking it is something different. It is made from an herb, which in these parts of America is known by the name of Paraguay, as being the produce of that country. Some of it is put into a calabash tipped with silver, with sufficient quantity of sugar, and some water to macerate it. After it has thus remained for some time, the calabash is filled with boiling water, and the herb being reduced to powder, they drink the liquor through a pipe fixed in the calabash, and having a strainer before the end of it. In this way the calabash is filled several times with water and fresh supplies of sugar, till the herb subsides to the bottom, a sufficient indication that a fresh quantity is wanting. It is also usual to squeeze into the liquor a few drops of the juice of lemons and Seville oranges, mixed with perfumes from odoriferous flowers. This is the usual drink in the morning, fasting ; and many also use it as their evening regale. I have nothing to object against

the salubrity and use of this liquor, but the manner of drinking it is certainly indelicate, the whole company drinking necessarily through the same pipe.'

This maté, or Paraguay tea, is made from the leaves of the *Ilex Paraguayensis*, a species of holly, growing wild in Paraguayan forests, which has hitherto defied all attempts to domesticate it. Before the maté manufacturer can commence operations, he has to buy the permission of the government to go leaf-gathering. This obtained, he collects a force of some fifty peons, or labourers, and twice that number of mules and bulls, and sets off to the woods in search of a desirable spot whereon to build his tatacua and barbecue, and run up a row of banana-thatched wigwams. As soon as the preparations are completed, the peons, clothed in waist-girdles and red caps, and carrying a poncho, a small axe, a cow-horn full of water, and a cigar apiece, go into the woods, two together. When they come upon a clump of yerba trees that promise well—the smaller the plants the better for their purpose—they set to work with their hatchets, lopping off the young shoots, and piling them up haycock fashion, until they have collected enough to fill their ponchos, when they return with their loads to the colony, empty the ponchos, and make for the forest again. As fast as the yerba sprigs are brought in they are taken to the tatacua. This is a space of ground some six feet square, beaten with heavy mallets until it is as flat and hard as such means can make it, and covered with blocks of timber. On these the yerba is laid, and spread out; the timber is fired, and the yerba is scorched. It is next put into nets made of hide, and placed upon the roof of the barbecue, a sort of arch constructed of hurdles, and burned again by kindling a large fire underneath; three peons, armed with long poles, stirring the mass about, to prevent the flames setting it ablaze. When the leaves are considered 'done,' the fire is put out, the ground swept clear of ashes, and beaten hard, the yerba thrown down, and ground to powder in wooden mills. It is next weighed out in quantities of two hundred or two hundred and fifty pounds, preparatory to being packed. This last is a laborious process. A square sack, made of half a fresh bull's hide, is fastened by the corners to a couple of strong trestles fixed firmly in the ground. Into this the powder is thrown, while the packer beats it down till the sack is full to the brim. It is then closed, sewn up, and left to tighten on the contents as it dries, and in forty-eight hours becomes as hard, heavy, and impervious as a block of stone.

The quality of the maté depends upon the way in which the yerba is prepared, and in some measure upon the state of the weather while the operations are in progress. The principal varieties of maté are known as caa-cuyo, caa-miri, and caa-quaya. The first is made from half-expanded leaf-buds, and as it will not keep long in good condition, the consumption of it is limited to Paraguay itself. The caa-miri is made from leaves very carefully picked and stripped before roasting. The caa-quaya is the ordinary form of yerba-tea, manufactured in the way described above. It is the favourite beverage of almost the entire population of South America, drank at every meal, and welcome every hour of the day. Milk and sugar are but seldom added to it. A small quantity of the powder is placed in a bowl, and cold water poured

upon it; after standing a short time, boiling water is added, and it is ready for drinking. It is credited with calming the restless, and acting as a tonic with torpid folk, but immoderate use induces precisely the same class of disorders as result elsewhere from excessive potations of ardent spirits. To be tasted in perfection, maté should be imbibed near the place of its manufacture, as it quickly loses its peculiar and agreeable aroma. As particles of the leaf and stem float on the surface of the liquor, which blackens so rapidly upon being exposed to the air that it would be repulsive to the sight if served in cups, it is not without good reason that maté lovers still drink it as they drank it when Ulloa made its acquaintance.

An inferior kind of maté is made in Brazil, called Gongonha. St Hilaire will have it that the plant supplying it is identical with the Paraguayan holly, but if it were so, the government of Buenos Ayres would hardly have employed Dr Bonpland in 1820 to fetch some yerba trees from Paraguay for planting at the mouth of La Plata; an attempt costing the doctor dearly, for he was seized, and detained for years, in a kind of honourable captivity, despite the intervention of powerful friends in Europe. What is known in Austria as Brazilian tea, is not maté, but a mixture of Chinese tea and the leaves of *Stachytarpheta jamaicacencis*. Capitâo de malto, a real Brazilian leaf-drink, much extolled by St Hilaire, is an infusion of the leaves of *Lantana pseudothea*. Santa Fé tea is derived from *Alstonia theiformis*, and Mexican tea from *Chenopodium ambrosoides*. An American doctor, travelling in Brazil, came across a country-woman presiding over an establishment for the sale of cooked pork and beans, who told him maté was the same 'truck' they used to make tea in Carolina. She was not quite right, but yet not very far wrong, the North Carolina tea being made from another species of *Ilex*. The list of North American pseudo-teas is not a long one, and they may be dismissed in a very few words. Labrador tea, an exhilarating but very astringent drink, is made from two species of *Ledum*, growing freely along the shores of lakes and on the borders of swamps. Oswego tea, once much in vogue in the town of that name, is the product of the fragrant scarlet Monarda; and Mountain tea, that of a dwarf evergreen known as *Gaultheria procumbens*.

The grandes of Tonquin drink Chinese or Japanese tea because it is the fashion to do so, but the Tonquinese who dare to follow their liking decidedly prefer their own native tea. Baron names two kinds—chia-bang, the leaf of a certain tree; and chia-way, the buds and flowers of another tree, which, after they are dressed and roasted, they boil, and drink the liquor hot; the last is of a good and pleasant taste. Richard says the chia-bang has a sharp taste, and quickly quenches thirst, adding: 'They have also many other kinds of leaves, barks, and even wood—a piece of which may be boiled in different waters for seven or eight days and preserve its quality; this drink dries up the stomach, being too astringent, and too much hastens digestion; it is so sharp that it gives the itch if too much used.'

Tibetan tile or brick tea is manufactured from the leaves of a tree some fifteen feet high, growing plentifully on the banks of the river Ya-ho. The gathering takes place at the end of May or beginning of June, when the leaves are about an inch

long. They are dried a little in the oven, rolled by hand into balls, and put aside to ferment. When this comes about, the balls are transferred to brick-shaped wooden moulds, and placed over charcoal fires until the tea is baked into a solid mass, so tough that it is not easy to cut it with a knife. This is the genuine article; but the chief supply of brick-tea—a necessity of life to the Kalmucks, Siberian Tartars, and the Russian peasants south of the Baikal—comes from the southern provinces of China, where immense quantities are manufactured out of spoiled tea-leaves, mixed with the leaves of wild plants, cemented together with bullocks' blood, and dried in ovens; sometimes in the shape of balls, but generally in that of tiles, an inch thick, and from eight to fourteen inches long. As this strange compound is usually mixed with rye-meal and mutton-fat before being swallowed, it hardly comes in the category of leaf-drinks.

The people of the Eastern Archipelago have no belief in water. They say it will not quench a man's thirst, nor give renewed vigour to tired sinews. Tea is not bitter enough for their palate, and for coffee—the benighted European is welcome to every berry. The only non-intoxicating drink the Sumatran does believe in is coffee-leaf tea, and his faith is founded on experience. Give him a little boiled rice and plenty of coffee-leaf tea, and he can work for weeks together in the rice-fields, up to his knees in mud, scorched by a burning sun, or drenched with tropical downpours. Heat, cold, and wet are alike to him, for they work him no harm, and he ascribes his immunity entirely to the virtues of his favourite beverage. When grown for its berries, the coffee-plant can only be cultivated successfully in particular soils and particular situations; but when it is only required to yield a good crop of leaves, it can be profitably grown wherever the soil is tolerably fertile. Mr Motley, travelling up the Chanaku river, saw coffee-trees growing everywhere near the houses, and in every case, noticed that the berries lay decaying on the ground, as though not worth consideration. He was impelled to taste the coffee-leaf tree, which smelt exceedingly like green tea, and found it so pleasant to drink, and so refreshing after a hard day in the sun, that he no longer wondered at the excessive fondness the Sumatrans display for what is truly their national beverage. Mr Ward, who passed twenty years in Padang, is loud in its praises. He drank it morning and evening, and found it invaluable, giving immediate relief to hunger and fatigue, and clearing the brain of its cobwebs. The Sumatrans hold that the best liquor is obtained from leaves shed by the plants; but their usual method of proceeding is to take off the ends of the branches and suckers, and break them up into twelve or fifteen inch lengths. These are fixed side by side in a split bamboo, so that the leaves all appear on one side, and the stalks on the other, by which means equality of roasting is insured, the leaves being roasted together, and the stalks together. After tying up the bamboo, the tuft of leaves and stalks is held over a smokeless fire, and kept moving about, so as to roast without singeing it. The stalks are considered quite as valuable as the leaves, and when the operation is completed, leaves and stalks are rubbed between the hands into a coarse powder, and then they are ready for use. Some samples of coffee-leaf tea were shewn at the first Great Exhibition, and were favourably

reported upon both by tea-tasters and analytical chemists, the latter pronouncing it to contain all the characteristics of the coffee-bean, while richer in theine. The infusion is of a deep-brown colour, and extremely fragrant, its odour—like its taste—resembling that of a mixture of tea and coffee. Dr Stenhouse says: 'The infusion of the coffee-leaf has a much greater resemblance to that of tea than to a decoction of the coffee-bean, so that, should the coffee-leaf ever come into general use in European countries, it will be rather as a substitute for tea than for coffee. If the leaves were only dried at a somewhat lower and better-regulated temperature, I have little doubt that they would yield an agreeable beverage.'

Five or six years ago, the Parisians were invited to adopt a new beverage in Faham tea, long used by the natives of Mauritius, and recommended as possessing all the virtues of Chinese tea, without the drawback of producing wakefulness, besides having special merits of its own; its aroma being something delightful, while it can be drunk either hot or cold, and is rendered delicious by the addition of a soupçon of rum. Faham tea is made from the leaves and stalks of *Angraecum fragrans*, a sweet-smelling orchid, found upon the high slopes of the island of Réunion; the leaves are neither roasted nor coloured artificially, so that the infusion is very light coloured. In taste it is utterly unlike tea, and its fragrance is that of the Tonquin bean, and so powerful, that were it to supersede the ordinary contents of the teapot, that article would serve the twofold purpose of a teapot and a perfume vaporiser; but whether desirable or not, that consummation is hardly likely to come about, since the Parisians do not seem to have taken kindly to the novelty.

The leaves of the *Catha edulis* supply the Abyssinians of the kingdom of Shoa with a beverage known as Chaat. All the preparation they require is drying thoroughly in the sun. They are used in more ways than one, being chewed, boiled in milk, or infused in boiling water, and drunk sweetened with honey. This Abyssinian tea possesses such sleep-dispelling power that it is said that by merely eating a few leaves, a sentry can do duty the night through without the slightest feeling of drowsiness. The drink itself is bitter and very exhilarating, and high in favour with the natives, who cultivate the Catha sedulously, in the belief that plague and pestilence are powerless wherever it is grown.

Tasmania abounds in so-called tea-trees, hand-some shrubs bearing pinnacles of blossoms like those of our English hawthorn. They derive their name from the use to which they were put by the early settlers. The list of plants from which leaf-drinks are obtained is a long one. Mr Simmonds names above eighty, and another authority says above two hundred substitutes for tea are in use in the world, but so little is known about them that we must pass them by unnoticed, and content ourselves with noticing a few European leaf-beverages.

In a tract upon Tea and Coffee published in 1682, we are told some people make decoctions of sage, betony, or rosemary, which they extol above both tea and coffee. Spenser's 'wholesome saulge' was once held to be an herb of such virtue that it was asked, in all seriousness, how any one who grew sage in his garden could die. It is not without panegyrists even now, one of whom (claiming,

by the way, to be a descendant of the poet of the *Faire Queen*) exalts sage-tea above the beverage of Cathay, singing :

I a better drink have found,
Grown on my native English ground—
Sage is more prized by me ;
It does not shake, like tea, my nerves,
But strengthens, and my health preserves—
All pure, untaxed, and free.

It tastes not bitter, turns not sour,
It ne'er disturbs my sleeping hour,
But slumber fresh invites.
Blest herb ! I well may sing thy praise,
Who bring'st me clear and healthy days,
And comfortable nights.

Somebody, professing to speak from long experience, avers that the leaves of the raspberry, if properly treated, make finer tea than any that finds its way to Mincing Lane. The French peasants make an aromatic drink from the leaves of the black currant tree, and believe it to be a specific for indigestion. Thanks to M. Raspail, they have also learned to appreciate the flavour, aroma, and virtue of borage tea. Our dietetic philosopher and friend, Fin-Bee, would like to do in England what M. Raspail did in France, but knowing the inveterate suspicion the poorer classes at home have of anything to which they are unaccustomed, especially if it costs little, discreetly declines making the experiment himself. 'Let any social doctor,' says he, 'who may be anxious to test the pliability of the English agricultural labourer as a pupil, accost him with the following proposition : "My good man, I have, I assure you, from the bottom of my heart, the liveliest interest in your welfare. Now, the tea you drink is detestable, adulterated, and very dear stuff. It does you no good ; now, take my advice—grow borage, which will cost you nothing, and drink borage tea. It helps digestion, is a sudorific, has a delightful aroma, and will have no bad effect on your nerves, or the nerves of your wife." I am lost in conjectures as to the fate that would befall the doctor. He might be bonneted, elbowed into a thorn-hedge, reminded that the horse-pond was near, or recommended to confine his attentions to his own teacup. But the unluckiest result of all would be thanks for his suggestion. No, the unluckiest would be the trial of it.'

That palatable drinks may be made from the leaves of home-grown plants, is evident from the extensive use made of them by adulterators of tea in time past, if not in time present. When the East India Company were the sole importers of tea into England, the Company's agents exercised a strict supervision over the importations, and 'lie'-tea could not find its way here. It was therefore worth the while of thievish traders to make lie-tea for themselves ; and the extent to which the manufacture was carried may be guessed by the fact of no less than ten hundred and thirty pounds-weight of ash, elder, and sloe leaves, dried, pressed, and ready for mixing, being seized by the excise officers in Dorsetshire, in 1764, when searching the house of a man suspected of having smuggled tea in his possession. These leaves were regularly collected in Cranbourn Chase during the summer, the collecting affording such profitable employment that the farmers thereabouts could obtain no labourers to gather in the harvest. In 1818, a London grocer was fined for adulterating tea. He employed men

to gather whitethorn and blackthorn leaves, at the rate of twopence a pound ; these were boiled, then dried upon a copper-plate, and afterwards rubbed with the hand, to make them curl ; verdigris and Dutch pink being used in the curling process, if the leaves were to pass for green tea. The discovery cost the rogue eight hundred and forty pounds. The tea-dealer need run no such risk now. It is no part of the duty of our rulers, at least so they say, to protect the health of Her Majesty's lieges, so long as the revenue is not defrauded. Lie-tea, cheaper than he could make it, is to be bought in the open market. Free-trade, like other good things, has its drawbacks.

THE MONTH: SCIENCE AND ARTS.

THE parliamentary committee appointed to inquire into the questions provoked by the high price of coal have made their Report, in which they embody much evidence of various kinds—technical, commercial, social, and political ; and among all this there is one conclusion highly interesting to all who use fire—namely, that 'coal will never again be so cheap as it was two years ago.'

The total 'output' of coal in Great Britain, in 1872, was 123,386,758 tons : the number of persons employed in producing this great quantity was 393,344. Miners are now unwilling to work 'long hours ;' they require higher wages and better dwellings than formerly ; they begin to see that schools are good things ; but they are still too apt to look at all questions affecting themselves from the pig-headed point of view. In one particular it appears that masters and men are agreed—they want to see machinery employed instead of men in cutting out the coal. Our readers are aware, from notices in this *Journal*, that machines for 'getting' coal have been tried in some mines ; but they should be introduced into every mine. Coal 'got' by machinery is in better condition than that got by hand ; and the hewers can always find work in propping roofs, and other tasks requiring skill and knowledge. All who read the Report will, we think, feel it a duty to burn their coal with the greatest possible economy.

The Council of the Society of Arts have held their first course of 'Technological Examinations,' the subjects being Cotton, Paper, Silk, Steel, and Carriage-building. These examinations are especially intended for working-men ; it is therefore somewhat remarkable that not more than six competitors appeared : one willing to be examined on cotton, two on steel, three on carriage-building. The Reports of the examiners on the answers given represent them as 'very satisfactory'—'very superior,' and 'highly creditable ;' and the carriage-building examiner states that there are many young men in the trade able to do as well ; but either that they would not take the trouble to attend, or did not know of the examinations. Employers, it appears, are crying out more and more for intelligent workmen ; and the suggestion has been made, that the thousands of young men who are now fighting for

clerks' places on small pay, would better their condition by learning some handicraft. With a better educated class of workmen, much of the foolishness which now prevails in all trade-unions might be expected to disappear. Educators of whatever kind should remember, and remember always, that the education which aims only at the head, and takes no heed of the heart, can never lead to permanent advantage for any one concerned. One of the examiners says: 'Some winners of prizes at workmen's exhibitions have had their heads so turned by a first success, that this has injured their future prospects.'

Westphalia is a country of peat-bogs, and peat is largely burnt as fuel and for agricultural purposes. A notion arose that peat-smoke was injurious to the crops, but observations have been made, beginning in 1862, which shew, contrary to the popular opinion, that the crops were best when there was most peat-smoke in the air; and that in the years of least peat-smoke the crops were below the average.

On the other hand, experiments have been made at Berlin which corroborate former observations on the injurious effect of coal-gas on vegetation. In the botanical garden of that city, a maple and a lime tree were treated every day for six months with 100 cubic feet of gas poured into the ground at about three or four feet from the trees. They began to look sickly at the end of the first month, and in the following year they both died. It was then found that the poisonous action of the gas begins at the growing ends of the roots. 'In another experiment,' as is recorded in the *Journal of the Chemical Society*, 'twenty-five cubic feet of gas were daily passed into a plot of ground having a surface of 144 square feet, and on which twelve young trees had been growing for a year and a half: the trees shewed signs of poisoning in a week's time, where the surface of the soil had been firmly stamped down, and in a month all had lost their leaves.' From these open-air experiments it will be clearly seen that the burning of coal-gas in a dwelling-house must be injurious to health, unless great pains are taken to secure proper ventilation.

The Royal Dublin Society have appointed a committee to ascertain whether peat could be advantageously burnt in a Siemens' regenerative gas-furnace. The answer is favourable; and there is every reason to hope that the millions of acres of Irish bog will ere long be turned to good profit. The regenerative furnace can be applied to so many purposes in metallurgy and in pottery-work, that there can be no question of failure of demand, if the fuel can only be produced in a fit state. As many of our readers may not know what is meant by a Siemens' regenerative gas-furnace, we explain in few words that it is a brick structure in which the fuel is converted into gas in a chamber of peculiar construction; that the gas then passes into the furnace where the materials to be operated on are collected, and is there burnt with hot air. The heat developed is intense; and as it flies off, is arrested in brick chambers called regenerators, which heat the air that feeds the furnace. As will be understood, the waste of heat is thus reduced to

the smallest amount. It is in a furnace of this description that Mr Siemens makes steel direct from the ore.

It seems as if we were never to come to the end of our metalliferous deposits, for recently, in the pleasant rural districts of North Oxfordshire, in the neighbourhood of Banbury, ironstone has been found, and now every week a thousand or more tons are excavated and sent to the smelting-furnaces. This quantity is likely to be increased, for, according to Professor Phillips, there are thirty thousand tons of ore to the acre; and, describing one of the deposits, he says: 'It shews an open front of some hundreds of yards, only inferior to the great escarpment of Eston-Nab and Upleatham in Yorkshire.'

A question much discussed of late among men of science in England is, as to the way in which the sun's heat is maintained. A physicist in the United States argues that this question is futile, because the sun can heat the earth without any loss of power or material, in the same way as it affects the earth's electricity without any transfer of matter. 'Heat,' he says, 'is not more a source of power than cold. Heat without cold, light without darkness, any form of energy without its complement, is death.'

A learned professor in the States, in a treatise on the features of the globe, shews that mountains were not formed by vertical upthrust, but by horizontal pressure; and, as regards the materials of which the globe is built, that the surface-portions have passed through perpetually repeated cycles, and all the stages of rocks and soils; igneous rocks disintegrated to soils, carried away and deposited as sediments, consolidated into stratified rocks, metamorphosed into gneiss, granite, or even into lavas, to be again, after eruption, reconverted into soils, and recommence the same eternal round. This is a theory which is gaining ground; but it leaves the question, What is the original material? still unanswered.

The moon has a very long day, and so much exposure to the heat of the sun can hardly fail to produce changes on her surface. With a series of observations and sketches, it would be possible to compare the appearances of lunar objects as seen after long intervals, and thus evidence of changes, if they take place, would be obtained. With this object in view, a work has been published, *Selections from the Portfolios of the Editor of the Lunar Map and Catalogue*, which may be referred to with advantage by any one interested in the subject.

At a recent meeting of the Odontological Society, a patient was introduced, who, having had a swollen cheek with suppuration, had been treated more than two years for scrofula. At length he was seen by a member of the Society, who discovered decayed fangs of one of the teeth in the upper jaw: these were extracted, and in a fortnight the swelling abated, and the long-standing and disagreeable wound in the cheek was healed. Other cases of the same kind were mentioned at the meeting: they offer another example of the importance of knowledge of the true causes of disease.

In the progress of physiological chemistry, further confirmation is obtained of the poisonous effect of an overdose of oxygen. This gas is so important a constituent of the atmosphere, and so essential to health, that most readers will be greatly surprised to hear that it can be a poison. To

breathe compressed air is dangerous, as some workmen have experienced ; and it has been recently proved that thirty-five per cent. of oxygen in the blood acts as a rapid poison. The quantity usually present in blood is about half of this. Dogs subjected to compressed air fall into convulsions at a pressure of three and a half atmospheres, and at five atmospheres they die. In many respects the symptoms of poisoning by oxygen resemble those of poisoning by strychnine.

A chemist at San Francisco has discovered a fact which wine-growers should take note of. It is, that if air be driven through wine during fermentation, the wine can be drawn off from the yeast in a few days after the fermentation is complete, will be quite clear after a month or two, 'and of a more agreeable flavour than wine fermented in the ordinary way, and kept for two years.'—It is reported from Germany that a chemist has found a way to prepare a good extract of hops. This, on further proof, will be good news for brewers and hop-growers, for the extract will keep, and thus the surplus from a good hop-harvest may be held on hand to meet the deficiency of a bad year.

Advances have been made in photographic art which are full of promise of further progress. Mr Elwell, a member of the Photographic Society, shews that it is possible, with a proper lens and proper chemicals, and plates scrupulously clean, to do much more by instantaneous photography than has hitherto been accomplished. Unwearied patience and quickness to seize the proper moment, and perfect dexterity in manipulation, are also necessary. For one of his best pieces, a sunset, where the rays stream forth from behind a dark cloud, Mr Elwell had to wait seven or eight years. Some of his recent cloud and sea pieces shew that very charming effects may be seized and perpetuated by instantaneous photography.

Mr Marion has also made a discovery which opens a wide field of experiment. It is, that when a film has been excited by light—solarised, photographers call it—this excitement or solarisation can be communicated to another film by merely laying the first one on it. The action of light is thus transmissible without a fresh process of exposure ; and when it is known that a negative once taken can be multiplied to any extent by simple contact, there will be good reason to expect a further development of photographic art ; hitherto, photographers have been dependent on daylight, but now they can solarise a fresh film in three minutes, mount the film on a block, and print carbon prints from it whenever they please, regardless of sunshine or of weather.

In former *Months*, we have mentioned the successful endeavours made to introduce the cultivation of the 'cinchona' (or Peruvian bark) in India. We now make known that the ipecacuanha plant has been introduced into India with promising results. The cuttings sent out were taken from plants grown in the Botanic Garden, Edinburgh ; they were carefully packed in Wardian cases, and though in some instances they were not looked at during the voyage, they all arrived at Calcutta in safety. One batch of plants was packed in sphagnum moss ; others were roots packed in dry earth ; and Professor J. H. Balfour says that the dry way is to be preferred, as it imitates nature. The dormant faculty revives when the roots are unpacked and watered. The government gardener at Darjeeling

reported in September last that he hoped to have by the end of the year from 'two thousand to three thousand plants of ipecacuan in cultivation ;' and Professor Balfour remarks : 'I have no doubt that from the roots now in cultivation there, a large stock of young plants may be speedily produced in Sikkim, so as to furnish an abundant supply of this most important drug for our Indian possessions.' Further information on this subject may be found in the *Transactions of the Royal Society of Edinburgh* for 1872.

So desirous are the United States for a short cut by water to the Pacific, that they have sent another party to survey for a ship-canal across the Isthmus of Darien ; and the surveyors report that at last they have found a practicable route. On the Atlantic side the Atrato river, and on the Pacific side the Napipi river, will be used as far as navigable, so that the length of actual canal to be excavated will not be more than twenty-eight miles, of which six only present serious difficulties. The estimated cost is seventy million dollars, a sum which can be easily raised in these days of magnificent enterprises. The fact that at each river-mouth there is a good harbour, gives this route an advantage over all others hitherto surveyed.

SONNETS—THE EARLY THRUSH.

METHINKS that voice exults most joyously
That from the thrush's speckled bosom flows ;
Surely the rapture-raising minstrel knows
That the same Life that fills her throat with glee
Climbs swiftly up each bark-bound stem, and soon
Will shew green tissues where the leaflets lie
Yet winter-held, and to the bluer sky
Give fragrance fresher than the scents of June.
Still howls the northern wind with angry power,
But this loud airy music rings his knell ;
In her own tuneful tongue doth Nature tell
By her own warbling prophet that the hour
Approaches fast when a benigner reign
Will beautify the world with greener robes again.

The song is not thine own that thou, fond bird,
From thy lone perch upon the budding thorn,
Bestowest on the misty-hooded morn :
'Tis the old voice of Love that Time has heard
Through all the changes of aspiring years.
Full-hearted Hope, pavilioned by thy wings,
Inspires thy breast, and in thy matin sings,
Pouring a mirthful wisdom 'in our ears ;
And we who listen, feel our spirits rise
As to the dawning of a better day,
Responsive to the presage of thy lay.
Green fields are with the coming spring and skies
Breasted by softer clouds, and flowers and streams
Rejoicing in the presence of her brighter beams.

Next Saturday, September 6, will be commenced in this JOURNAL, a NOVEL, by the author of LADY FLAVIA, entitled

LADY LIVINGSTON'S LEGACY.

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